

REMARKS

Claims 1-12 and 19-32 are pending in the present application. Claims 1-5, 29 and 31 have been amended. Claims 4, 5 and 7-12 have been withdrawn.

Claim Rejections-35 U.S.C. 102

Claims 1-3 have been rejected under 35 U.S.C. 102(e) as being anticipated by the Farnsworth et al. reference (U.S. Patent Application Publication No. 2004/0113283). This rejection, insofar as it may pertain to the presently pending claims, is traversed for the following reasons.

The method of fabricating a semiconductor device of claim 1 includes in combination "providing a semiconductor wafer having a substrate with a first surface and a second surface opposite of the first surface, the first surface having a plurality of circuit elements each of which is defined by scribe lines formed in the substrate"; "forming a sealing resin on the first surface of the substrate";..."forming a heat spreading material on the second surface of the substrate, after said forming the sealing resin"; and "separating the semiconductor wafer by cutting the substrate at the scribe lines after the heat spreading material is formed on the second surface of the substrate". Applicants respectfully submit that the Farnsworth et al. reference as relied upon by the Examiner does not disclose these features.

The Examiner has interpreted dicing tape 26 as shown in Fig. 1J of the Farnworth et al. reference as the heat spreading material. Applicant respectfully

submits that dicing tape 26 in Fig. 1J of the Farnworth et al. reference is not particularly described as having heat spreading characteristics. It is thus not understood how dicing tape 26 may be interpreted as a heat spreading material.

With further regard to this rejection, in the method of fabricating a semiconductor device of claim 1, the semiconductor wafer is separated by cutting the substrate at the scribe lines, after the heat spreading material is formed on the second surface of the substrate. However, semiconductor substrate 14 of the Farnworth et al. reference is diced in a scribing step as shown and described with respect to Fig. 1C. As further described in paragraph [0141] of the Farnworth et al. reference, backside thinning is performed on semiconductor substrate 14 to singulate thinned dice 10T. Polymer filled trenches 28P as illustrated in Fig. 1H hold thinned dice 10T and wafer 12 together. As described in paragraph [0155] of the Farnworth et al. reference with respect to Fig. 1K, final singulation of wafer 12 is performed by sawing polymer filled within trenches 28P. This singulation cuts the polymer resin, not substrate 14. That is, substrate 14 is previously cut as described with respect to Fig. 1H of the Farnworth et al. reference, prior to application of dicing tape 26 (interpreted by the Examiner as the heat spreading material of claim 1). The Farnworth et al. reference as relied upon by the Examiner therefore does not disclose separating a semiconductor wafer by cutting a substrate at scribe lines after a heat spreading material is formed on a second surface of a substrate, as would be necessary to meet the features of claim 1. Applicants thus respectfully submit that the method of fabricating a semiconductor device of claim 1

distinguishes over the Farnworth et al. reference as relied upon by the Examiner, and that this rejection, insofar as it may pertain to claims 1-3, is improper for at least these reasons.

Claim Rejections-35 U.S.C. 103

Claims 19 and 20 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Farnworth et al. reference in view of the Hausmann reference (U.S. Patent No. 6,104,596). Applicants respectfully submit that the Hausmann reference as secondarily relied upon by the Examiner does not overcome the above noted deficiencies of the Farnworth et al. reference. Accordingly, Applicants further respectfully submit that claims 19 and 20 would not have been obvious in view of the prior art as relied upon by the Examiner taken singularly or together, and that this rejection is improper for at least these reasons.

With further regard to this rejection, on page 4, line 3 of the current Office Action dated September 2, 2005, the Examiner has very generally made reference to "the method according to claim 29". However, claim 29 has not been rejected in view of either the Farnworth et al. or Hausmann references. The Examiner is respectfully requested to clarify the status of claim 29, and to clearly set forth on the record any corresponding prior art rejection of claim 29.

Although the record is unclear with respect to prior art rejection of claim 29, the following comments are offered regarding claim 29. The method of fabricating a

semiconductor device of claim 29 includes in combination "separating the semiconductor wafer by cutting the substrate at the scribe lines after the heat spreading material is formed on the second surface of the substrate". Applicants respectfully submit that the method of fabricating a semiconductor device of claim 29 would distinguish over the above noted relied upon prior art for at least somewhat similar reason as emphasized above with respect to claim 1.

Claims 21 and 22 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Farnworth et al. reference in view of the Sreeram et al. reference (U. S. Patent No. 5,858,145). Applicants respectfully submit that the Sreeram et al. reference as secondarily relied upon does not overcome the above noted deficiencies of the Farnworth et al. reference. Applicants therefore further respectfully submit that claims 21 and 22 would not have been obvious in view of the prior art as relied upon by the Examiner taken singularly or together for at least these reasons.

Claims 20 and 31 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Farnworth et al. reference in view of the Sasov reference (U. S. Patent No. 6,184,579). Applicants respectfully submit that the Sasov reference as secondarily relied upon does not overcome the above noted deficiencies of the Farnworth et al. reference. Accordingly, Applicants respectfully submit that claims 20 and 31 would not have been obvious in view of the prior art as relied upon by the Examiner taken singularly or together, and that this rejection is improper for at least

these reasons.

Claims 30 and 32 have been rejected under 35 U.S.C. 103(a) as being unpatentable over the Farnworth et al. reference in view of the Sasov reference, in further view of the Hausmann reference. Applicants respectfully submit that the Hausmann reference as secondarily relied upon does not overcome the above noted deficiencies of the previously relied upon prior art, and that this rejection of claims 30 and 32 is thus improper for at least these reasons.

Allowable Subject Matter

Applicants respectfully note the Examiner's acknowledgment that claims 6 and 24-28 are allowed.

Claims 4, 5 and 7-12

Since generic claim 1 distinguishes over the relied upon prior art and thus should be allowable, the Examiner is respectfully requested to rejoin and examine withdrawn dependent claims 4 and 5, which should also be allowable at least by virtue of dependency upon claim 1.

Also, since claim 6 has been allowed, the Examiner is respectfully requested to rejoin withdrawn claims 7-12, which should also be allowable by virtue of dependency upon claim 6.

Conclusion

The Examiner is respectfully requested to reconsider and withdraw the corresponding rejections, and to pass the claims of the present application to issue, for at least the above reasons.

In the event that there are any outstanding matters remaining in the present application, please contact Andrew J. Telesz, Jr. (Reg. No. 33,581) at (571) 283-0720 in the Washington, D.C. area, to discuss these matters.

Pursuant to the provisions of 37 C.F.R. 1.17 and 1.136(a), the Applicants hereby petition for an extension of one (1) month to January 2, 2006, for the period in which to file a response to the outstanding Office Action. The required fee of \$120.00 should be charged to Deposit Account No. 50-0238.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment for any additional fees that may be required, or credit any overpayment, to Deposit Account No. 50-0238.

Respectfully submitted,

VOLENTINE FRANCOS & WHITT, P.L.L.C.



Andrew J. Telesz, Jr.
Registration No. 33,581

11951 Freedom Drive, Suite 1260
Reston, Virginia 20190
Telephone No.: (571) 283-0720
Facsimile No.: (571) 283-0740